

June 8, 2018

Jeremy E. Swenson, CSP
Swenson Consulting
11940 Cartwright Avenue, Suite 300
Grandview, MO 64030

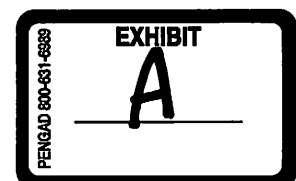
Severson, Wogsland & Liebl PC
Attn: Nathan Severson
4627 44th Ave. S., Ste. 108
Fargo, ND 58104

Dear Nathan:

This report has been generated to forward snow and ice expert observations, conclusions, and opinions related to a slip and fall incident that occurred February 4th, 2014 at the Kodiak Oil & Gas (USA) Inc. Koala 154 97 15 34 27 2H oil well, located in McKenzie County, North Dakota. These observations, conclusions, and opinions have been developed by reviewing case documents and files that were provided by Nathan Severson in the Donald Weese vs Kodiak Oil & Gas (USA) Inc. N/K/A Whiting resources corporation case. The case is located in the United States District Court, for the District of North Dakota Western Division. The case number is 1:17-cv-00189.

Introduction:

My name is Jeremy Swenson, and I have been retained by Severson, Wogsland & Liebl PC on behalf of Nathan Severson. I have been asked to review case documents and to opine on the snow and ice removal industry standards and services that were provided by Kodiak Oil and Gas (USA) Inc. I have also been asked to review the snow and ice removal plans, policies, and procedures used by Kodiak Oil and Gas (USA) Inc., and to review pictures of the area where the incident occurred. I will address "industry standard of care" for snow and ice removal as it relates to Kodiak Oil and Gas (USA) Inc., and the snow and ice removal services that were provided in relationship to the industry at large.



This report is not intended to be exhaustive in that a detailed examination of this property and all the information in this case has been initiated recently. This report should be considered to be subject to supplementation or future revisions if additional information becomes available. This document will not discuss the minutia of the case, it will generally address key issues related to the case as they are known at this time.

Qualifications:

I currently work full time in the snow and ice removal industry as a Certified Snow Professional “CSP” with over 25 years of experience in the industry. As of 2018, there were less than 225 CSPs in the US and Canada. To become a “CSP”, I passed a three-hour exam that focused on: proficient knowledge of business, snow and ice science, sub-contractors, snow & ice operations, and techniques of the snow removal industry. I am actively involved with SIMA, the “Snow and Ice Management Association”, which has the largest membership of snow and ice owners and contractors in the US and Canada. I served on the SIMA “Advanced Contract Clauses” national committee in 2017 and served on the national 2018 SIMA “Best Practices Committee”, which focuses its efforts on setting national industry standards for snow and ice removal contractors, property managers, and building owners all across the United States. I own Snowmen, Inc., which contracts with 500+ commercial properties in the average winter season. I have managed and overseen snow and ice operations on over 10,000 acres of parking lot pavement, and over 28,000,000 square feet of sidewalk walking area in my career.

I personally prepare over 1,500 snow and ice removal contracts per winter season and am an expert on snow and ice removal contract analysis and preparation. I have assisted hundreds of property managers and owners of commercial properties with setting the industry standard of care for snow and ice removal on their commercial properties, and I have overseen snow and ice removal operations at many commercial sites similar to the Koala 2H oil well site over the last 25 years. I am familiar with the snow and ice removal industry standard of care that is used at oil, gas, and utility pad locations which receive pedestrian foot traffic. Please note that the conclusions and opinions presented in this report are based on my education, experience, and the standards of practice for the snow and ice removal industry and represent valid conclusions and

opinions to a reasonable degree of certainty. Additional experience and qualifications can be found in my CV, which is attached to this report.

Observations, Authorities, & Facts:

1. Kodiak Oil and Gas (USA) Inc. owned and operated oil well Koala 154 97 15 34 27 2H located in McKenzie County, North Dakota on February 4, 2014. The well site has large storage tanks which sit on a gravel pad.
2. Donald Weese worked for Plains, Rocky Mt. Trucking division who had a contract with Kodiak Oil and Gas (USA) in February of 2014 to remove oil from the tanks at the site to transport to another location.
3. Donald states in his deposition that he had talked to a pumper employee and asked if perhaps they could get a garbage container for rock salt or kitty litter so he could apply the material to assist with traction in icy conditions. (Donald Weese deposition – page 121).
4. Donald states in his deposition that some well sites owned and operated by other companies like XTO had snow and ice removal services performed at the sites and others did not. Kodiak Oil and Gas (USA) Inc. sites were among the worst sites with snow and ice on them that he visited. The Kodiak Oil and Gas (USA) Inc. sites did not have any snow or ice removal services performed after a winter event. (Donald Weese deposition – Pages 90-91, 118-119, 120-121).
5. Donald Weese slipped and fell on ice at the Kodiak Oil and Gas (USA) Inc. well site around 10:15AM on February 4th, 2014. He took a picture of the icy conditions that existed at the site the morning of the slip and fall incident. (Donald Weese deposition – pages 64, 69).
6. ASTM F2966-13 Standard Guide for Snow and Ice Control for Walkway Surfaces is a standard published by the American Society for Testing and Materials. It is a national

Snow and Ice removal industry standard and SIMA, the Snow and Ice Management Association, recommends that operations in a snow and ice management plan comply with this national standard. SIMA is the largest snow and ice association in the United States and Canada with over 20,000 members consisting of building owners, snow contractors, and property managers. ASTM F2966-13 covers snow and ice control procedures that are used in the snow and ice removal industry. The standard states known methods to bring about reasonably safe walkway surfaces where snow and ice may impact the safety of pedestrians. It is used by property owners, property managers, and snow and ice contractors in the industry.

7. ASTM F2966-13 Section 3.2.1 states: “anti-icing materials, n-dry or liquid snow and ice control materials applied before a snow and ice event intended to prevent precipitation from bonding (freezing) with the pavement, or weaken bonds formed for easier removal.” (ASTM F2966-13).
8. ASTM F2966-13 Section 3.2.2 states: “de-icing materials, n-snow and ice melting products applied on top of a layer of snow or ice, or both, that is bonded to the pavement. 3.2.2.1 Discussion – Can also be applied proactively during, or after plowing or snow and ice removal” (ASTM F2966-13).
9. ASTM F2966-13 Section 5.1.1 states: “Control techniques for exterior walkway surfaces include anti-icing, plowing, snow blowing, shoveling, de-icing, and/or applying sand or other abrasives.” (ASTM F2966-13).
10. ASTM F2966-13 Section 5.1.2 states: “Reasonable effort should be made to ensure exterior walkway surface safety for pedestrian traffic” (ASTM F2966-13).
11. ASTM F2966-13 Section 5.1.3 states: “A combination of preparatory and ongoing snow and ice control methods should be employed, as applicable.” (ASTM F2966-13).

12. ASTM F2966-13 Section 5.1.7 states: "Walkway surfaces should be monitored and treated for refreezing." (ASTM F2966-13).

Opinions and Conclusions:

1. All of my opinions and conclusions set forth in this report are stated to a reasonable degree of probability and/or certainty. It is also my opinion that all of the instances and circumstances I identify in this report where Kodiak Oil and Gas (USA) Inc. failed to exercise reasonable care more likely than not caused the slip and fall incident on a dangerous condition (snow and ice) that injured Donald Weese.
2. *Kodiak Oil and Gas (USA) Inc. owned and operated oil well Koala 154 97 15 34 27 2H located in McKenzie County, North Dakota on February 4, 2014. The well has large storage tanks which sit on a gravel pad.*
3. *Donald Weese worked for Plains, Rocky Mt. Trucking division who had a contract with Kodiak Oil and Gas (USA) in February of 2014 to remove oil from the tanks at the site to transport to another location.*
4. *Donald states in his deposition that he had talked to a pumper employee and asked if perhaps they could get a garbage container for rock salt or kitty litter so he could apply the material to assist with traction in icy conditions. (Donald Weese deposition – page 121). Donald Weese asked if Kodiak Oil and Gas (USA) Inc. would be willing to place a garbage can with rock salt or kitty litter so he could place material on the ice to help assist with traction. It is standard in the industry today that a "container" or bucket of rock salt or traction material like sand or kitty litter is placed at job sites or commercial properties so that pedestrians can place deicer or traction material on icy conditions as needed. There are many different types of deicer and traction material options and containers available that commonly used in the industry today. I have attached Picture #1 to this report which shows an example of a type of container that is commonly used at commercial properties or job sites to hold deicer or traction material. You can purchase*

40lb pails of deicer that are marketed and sold for the purpose of placing at job sites or commercial locations for pedestrians to use as needed when they feel icy conditions are present. The cost of a 40lb pail of deicer is around \$25, and I have also seen property owners use 5-gallon buckets or plastic trash cans with lids to hold deicer or traction assistance material. Kodiak Oil and Gas (USA) Inc. ignored the request of Donald Weese to place a garbage can or some type of container of rock salt or kitty litter to help remediate the icy conditions at the well site. It is my opinion that Kodiak Oil and Gas (USA) Inc. failed to use reasonable care in their snow and ice removal duties by failing to place a container of deicer or traction assistance material to help remediate known and dangerous icy conditions at the Koala 154 97 15 34 27 2H oil well site on February 4, 2014. It is my opinion that if they would have placed a container of deicer, sand, or kitty litter, then the Kodiak oil well site would have been in a much safer condition than what was shown in the pictures of the site taken by Donald Weese on February 4, 2014.

5. *Donald states in his deposition that some well sites owned and operated by other companies like XTO had snow and ice removal services performed at the sites and others did not. Kodiak Oil and Gas (USA) Inc. sites were among the worst sites with snow and ice on them that he visited. The Kodiak Oil and Gas (USA) Inc. sites did not have any snow or ice removal services performed after a winter event. (Donald Weese deposition – Pages 90-91, 118-119, 120-121).* Donald Weese states in his deposition that there was a noticeable difference regarding the presence of icy conditions at different oil well sites that he visited and that some of the owners of the sites did have a snow and ice removal program, and or policy in place to remove the snow from the sites and prevent icy conditions. He states that the Kodiak Oil and Gas (USA) Inc. sites were the worst ones in regards to having dangerous snow and icy conditions. It is standard in the industry to have a trigger depth of 4” to remove snow at a commercial site like the Kodiak Oil and Gas (USA) Inc. site. It is my opinion that Kodiak’s policy to not remove any snow or apply deicer at the oil site is unreasonable and is not the industry standard of care for a commercial site like Koala 154 97 15 34 27 2H. It is my opinion that Kodiak Oil and Gas (USA) Inc. failed to use reasonable care in their snow and ice removal duties by not

having any plans, policies or procedures to remove snow or remediate icy conditions at the oil well site.

6. *Donald Weese slipped and fell on ice at the Kodiak Oil and Gas (USA) Inc. well site around 10:15AM on February 4th, 2014. He took a picture of the icy conditions that existed at the site the morning of the slip and fall incident. (Donald Weese deposition – pages 64, 69).* After reviewing the case files and photos taken by Donald Weese the morning of February 4, 2014 it is my opinion that he slipped and fell on ice at the Kodiak Oil and Gas (USA) Inc. well site.

7. *ASTM F2966-13 Section 3.2.1 states: “anti-icing materials, n-dry or liquid snow and ice control materials applied before a snow and ice event intended to prevent precipitation from bonding (freezing) with the pavement, or weaken bonds formed for easier removal.” (ASTM F2966-13).* The purpose of this standard is to emphasize the importance of salt and sand to keep ice from bonding to surfaces. Salt or traction material is often placed before, during, and after snow and ice events to prevent melting and refreezing. It is my opinion that Kodiak Oil and Gas (USA) Inc. did not abide by this industry standard to apply any salt or traction material on the oil well site before the slip and fall incident occurred. It is my opinion that if Kodiak Oil and Gas (USA) Inc. had applied salt or traction material, as per the industry standard, that the Kodiak oil well site would have been in a much safer condition than what was shown in the pictures of the site taken by Donald Weese.

8. *ASTM F2966-13 Section 3.2.2 states: “de-icing materials, n-snow and ice melting products applied on top of a layer of snow or ice, or both, that is bonded to the pavement. 3.2.2.1 Discussion – Can also be applied proactively during, or after plowing or snow and ice removal” (ASTM F2966-13).* The purpose of this standard is to emphasize the importance of salt to keep ice from bonding to surfaces. Salt is often placed before, during, and after snow and ice events to prevent melting and refreezing. It is my opinion that Kodiak Oil and Gas (USA) Inc. did not abide by this industry standard to apply any salt on the property before the slip and fall incident occurred. It is my opinion that if they

would have applied salt, as per this industry standard, that the Kodiak oil well site would have been in a much safer condition than what was shown in the pictures of the site taken by Donald Weese.

9. *ASTM F2966-13 Section 5.1.1 states: "Control techniques for exterior walkway surfaces include anti-icing, plowing, snow blowing, shoveling, de-icing, and/or applying sand or other abrasives." (ASTM F2966-13).* The purpose of this standard is to emphasize the importance of snow removal services and deicers, or traction assistance material, to keep ice from bonding to surfaces. Deicer is often placed before, multiple times during, and after snow and ice events to prevent melting and refreezing. It is my opinion that Kodiak Oil and Gas (USA) Inc. did not abide by this industry standard to apply any salt or traction assistance material on the property before the slip and fall incident occurred. It is my opinion that if they would have applied salt or traction assistance material that the Kodiak oil well site would have been in a much safer condition than what was shown in the pictures of the site taken by Donald Weese.
10. *ASTM F2966-13 Section 5.1.2 states: "Reasonable effort should be made to ensure exterior walkway surface safety for pedestrian traffic" (ASTM F2966-13).* The purpose of this standard is to emphasize the importance of keeping pedestrian walking surfaces safe. It is my opinion that Kodiak Oil and Gas (USA) Inc. did not apply this industry standard and failed to exercise reasonable care in their responsibilities to provide a reasonably safe walking area for pedestrians like Donald Weese at the Kodiak oil well site.
11. *ASTM F2966-13 Section 5.1.3 states: "A combination of preparatory and ongoing snow and ice control methods should be employed, as applicable." (ASTM F2966-13).* The purpose of this standard is to emphasize pre-planning before snow or ice events and the importance of keeping up with snow and ice control during or after a snow or ice event. Kodiak Oil and Gas (USA) Inc. did not do any preparatory planning or ice control, and they failed to put down any salt or traction assistance material at the oil well site for ice control. It is my opinion that Kodiak Oil and Gas (USA) Inc. failed to comply with this

industry standard and failed to exercise reasonable care in their snow and ice removal duties at the oil well site.

12. *ASTM F2966-13 Section 5.1.7 states: "Walkway surfaces should be monitored and treated for refreezing." (ASTM F2966-13).* The purpose of this standard is to emphasize the importance of an inspection program to ensure that after walkway surfaces have been cleared that all the snow and ice has melted and there is no snow or water that has melted and refrozen on the walkway surface. There were no employees or managers of Kodiak Oil and Gas (USA) Inc. that properly monitored the oil well site for refreezing. It is my opinion that Kodiak Oil and Gas (USA) Inc. failed to comply with this industry standard and failed to exercise reasonable care in their snow and ice removal responsibilities by failing to properly inspect and monitor the oil well site and by not putting down any salt or traction assistance material on the walkway surfaces, including the oil well site walking area.

I hereby certify that I have no interest, financial or otherwise, in the outcome of this matter. I reserve the right to revise these conclusions and opinions if additional relevant information is provided.

Submitted June 8, 2018

A handwritten signature in black ink, appearing to read 'Jeremy E. Swenson', with a long horizontal flourish extending to the right.

Jeremy E. Swenson, CSP

Materials Reviewed:

1. Complaint.
2. Answer.
3. Plaintiff's Responses to Defendants First Set of Discovery.
4. Donald Weese Deposition & Exhibits.
5. Photos of slip and fall area

Attachments:

1. Attached and made a part of this report are my current Curriculum Vitae.
2. Information regarding my Certified Snow Professional "CSP" designation from the Snow and Ice Management Association, "SIMA".
3. SIMA – Best Practices Checklist.
4. ASTM F2966-13 Standard Guide for Snow and Ice Control for Walkway Surfaces.
5. Picture #1.

Jeremy E. Swenson, CSP

11940 Cartwright Avenue, Suite 300

Grandview, MO 64030

(816) 564-9131

jeremy@jeremyswenson.com

www.jeremyswenson.com

CERTIFICATIONS/TRAINING:

- **Certified Snow Professional (CSP)**

- Satisfied requirements by SIMA (nationally recognized trade organization-Snow & Ice Management Association) to become a Certified Snow Professional. Requirements included proficient knowledge of business, snow & ice science, sub-contractors, and snow & ice operations & techniques of the snow removal industry.
- Served on the SIMA “Advanced Contract Clauses” national committee in 2017
- Served on the SIMA “Best Practices” national committee in 2017.
- Speaker on “National Snow Standards” at the 2017 SIMA 20th Annual Snow & Ice Symposium in Montreal, QC.
- Government Facilities: Security Clearanced and trained for onsite snow operations at IRS Regional Headquarters, FBI Headquarters, Department Of Treasury Buildings, and many types of government facilities.
- Airport: Security Clearanced, Badged, and trained in snow operations at Kansas City MKC Airport.
- Railroad: Trained in snow operations at 24/7 railroad facilities.
- Medical Facilities: Trained in snow operations at 24/7 hospitals, organ transplant centers, dialysis clinics, and many types of medical facilities.

EMPLOYMENT HISTORY:

Snowmen365, Founder, 2016 – Present

- Commercial Lawn & Landscape company providing full service lawn care, irrigation, sprinkler and landscape installation services.

Swenson Consulting, Founder, 2008 – Present

- Consultant to the industry, working with building owners, property managers, tenants, business owners to assist with questions and issues.
- Expert witness on slip and fall cases – working with plaintiff and defense counsel.
- Provide case/document review, deposition testimony and court testimony.

Snowmen, Inc., Founder, President & CEO, 2005-Present

- Work with property managers and building owners to develop and write Requests for Proposal (RFP's) for snow and ice removal.
- Work with property managers and building owners to develop Snow Response Plans.
- Directed Snow and Ice Operations in the greater Kansas City metro area.
- Supervise subcontractors.
- Knowledgeable in various methods and techniques in snow and ice management with an emphasis on ice and re-freezing due to the unique weather conditions in the Kansas City area.
- Experienced with electronic and manual record keeping, snow budgets and contracts, scheduling, routing and customer service.
- Developed proprietary snow and ice management software for Snowmen Inc., which allows all aspects of operation to be run digitally.
- Experienced in working with National Service Companies on snow contracts and service.
- Custom designed and built equipment for Snowmen, Inc.'s use in servicing winter storms.

Mulch Mart, Founder, 1995-2005

- Landscape supply company specializing in landscaping mulch and playground safety surfacing.
- Started snow removal division for company in 2003 and oversaw all aspects of operations from sales, subcontractors, equipment, snow removal contracts and customer service.
- Worked as a snow removal subcontractor removing and hauling snow with skid steers for various companies in the Kansas City area.
- Worked as a snow removal sidewalk subcontractor providing high level sidewalk snow and ice removal services at Menorah Medical Center and many different high profile commercial buildings.
- Snow Removal division grew in three years to one of the top 10 largest snow removal companies in Kansas City.

Smileys Executive Golf Complex, 1988-1995

- Helped build and maintain executive golf course and largest private driving range facility in Kansas City area.
- Responsible for overseeing budget, equipment and materials purchasing.
- Performed all snow removal operations for Golf Course and clubhouse area.

ABOUT JEREMY SWENSON:

Jeremy Swenson started Snowmen Inc., Snow and Ice Management Services in the basement of his home and grew it into the largest snow and ice management company in the Kansas City area and into one of the largest in the United States, both within seven years of its beginning. Jeremy has managed winter services for over 100,000 acres of parking lot pavement and over 23,000,000 square feet of sidewalk pavement cumulatively throughout his career.

Jeremy has undergone testing to become a Certified Snow Professional (CSP.) This designation is considered the gold standard for individuals who value professionalism and excellence in the snow and ice industry. Jeremy maintains active membership in SIMA, the Snow & Ice Management Association as well as ASCA, the Accredited Snow Contractors Association. Jeremy

spends time in the snow off season with continuing education provided by these snow associations to keep current with industry trends and snow removal practices.

Jeremy also maintains membership in the following professional organizations: BOMA, the Building Owners and Managers Association, IFMA, the International Facility Management Association, and IREM, the Institute of Real Estate Management. Jeremy maintains active involvement in these associations year-round, helping to stay current on the snow and ice removal needs of Building Owners and Property Managers.

Jeremy, as an active owner, personally has worked every snow and ice storm in the Kansas City area for the last 16 years and continues to manage one of the largest snow removal operations in the United States today. Jeremy is familiar with the most modern methods of snow and ice removal operations, procedures, equipment, contracts, and types of deicers used in the snow removal industry today. Jeremy has successfully navigated hundreds of slip and fall accidents and snow/ice removal related incidents. After overseeing thousands of commercial accounts over the years, Jeremy has worked through most every issue that is relevant to the snow and ice management industry.

Jeremy is one of the few owners of a large-scale snow removal operation that began as a subcontractor shoveling snow and chipping ice with ice scrapers to keep sidewalks clean. Over the years Jeremy has spent hundreds of hours working with ATV's, Plow Trucks, Skid Steers, Salters, and other types of specialized snow equipment. This "hands on" experience has given Jeremy a unique and hard to find understanding of snow removal operations and services. As CEO of Snowmen, Inc., Jeremy continues to work every snow and ice event from a sophisticated command center on a 4.2-acre property custom designed and built by Jeremy for the snow and ice business and which has the largest, privately owned salt storage dome in the Midwest.

CV Last revised as of: 7/8/2017

Experience Trust — Hire a Certified Snow Professional.

The Certified Snow Professional (CSP) certification is the recognized standard for professionalism and excellence in snow and ice management services. A CSP is an experienced, educated leader in the snow & ice management industry.

A Certified Snow Professional is:

RELIABLE	Values consistent service and communication.
ACCOUNTABLE	Focused on partnership, safety, and risk management.
RESOURCEFUL	Aligned with industry best practices and highly experienced.

Hiring a service provider for snow & ice management is an essential safety and financial decision. You need a trustworthy partner you can depend on.



What does it take to become a CSP?

1 THE APPLICATION

Individuals are only qualified to take the CSP exam if they meet strict pre-requirements tied to their direct snow industry experience, not just anyone can become a CSP. The application includes a significant financial investment.

2 THE PREPARATION

Preparing for the CSP exam is a rigorous endeavor that includes purchasing and reviewing these 6 different content modules:

- Business
- Snow & Ice Science
- Snow & Ice Operations
- Human Resources
- Sub-contractors
- Marketing

3 THE TEST

A comprehensive 200 question exam is delivered in a qualified testing center. No notes or study materials are allowed, and testers have 3 hours to complete the exam.

4 THE COMMITMENT

Once an individual achieves certification they must provide 15 continuing educational credits and a renewal fee annually.

www.sima.org



PROFESSIONALISM. EXPERIENCE.
KNOWLEDGE. EXCELLENCE.

BEST PRACTICES CHECKLIST

DOES YOUR SNOW & ICE MANAGEMENT PLAN INCLUDE THESE IMPORTANT GUIDELINES? www.sima.org/bestpractices

ESTIMATING & PLANNING:

- ☐ Utilizes a verifiable estimating system/tool to verify capacity related to size of site
- ☐ Production capacity planning based on company-established production rate guidelines, cycle times, and resource allocation projections
- ☐ Process includes client sign off on agreed-upon level of service, including site priorities and timing
- ☐ Preseason physical site inspection and staking process
- ☐ A consistent communication plan that includes multiple points of contact on each side exists between the client and service provider
- ☐ Procurement of materials, subcontractors and equipment aligns with Best Practices for Selling Snow Services procurement [[Purchasing Snow & Ice Management Guide - Appendix 6B](#)]
- ☐ Recommended level of service requirements and overall scope of work properly conveyed to operations team [[Purchasing Snow & Ice Management Guide - Appendix 1](#)]

ENVIRONMENTAL MANAGEMENT:

- ☐ Follow local/municipal regulations for storage of deicer material
- ☐ Implement Sections 1, 2 and Section 3-Level 1. [[SIMA Best Practices for Sustainable Salt Use](#)]
- ☐ Awareness of deicing/abrasive material, proper application rate and storage impacts on fresh water resources

EXECUTION & COMMUNICATION:

- ☐ Training process for operations team to understand contractual level of service requirements and overall scope of work agreed to in the sales process [[Purchasing Snow & Ice Management Guide - Appendix 1](#)]
- ☐ Pre-event communication to customers regarding upcoming event and planned response
- ☐ Documented snow response planning process for various storm scenarios
- ☐ Documented snow site engineering plan verifies priority areas and zones (e.g., handicap zones, fire exits and hydrants, drains, etc.) and areas for snow relocation
- ☐ Deicing materials for 3-5 regional storm events are kept in inventory at all times. Inventory includes deicing products for variable temperatures. Identify multiple sources for deicing materials procurement in case of supply challenges.
- ☐ Operations comply with [ASTM Standard F2966 Standard Guide for Snow and Ice Control for Walkway Surfaces](#)
- ☐ Define a weather monitoring process, which may include third-party outsourcing
- ☐ Implement a formal preseason training program for field operations and managers (e.g., techniques, general safety, site/route specifics, service verification, and company policies), including completion documentation
- ☐ Define a consistent communication plan for dispatch of personnel
- ☐ In-season site/route inspections monitor operational processes
- ☐ Assign a consistent manager/foreman with experience (1-year minimum) and/or snow-specific training (8-hour annual minimum) to each route/site
- ☐ Subcontractor procurement process includes verification of required resources, including quality equipment and capacity, people, materials and insurance

SERVICE VERIFICATION:

- ☐ Implement a documented verification process (e.g., site visit/work completion logs)
- ☐ Utilize electronic reporting and location verification systems (e.g., IVR, GPS, automated vehicle location, mobile application)
- ☐ Conduct post-service inspections to verify and document service completion
- ☐ Provide post-event communications to clients related to weather and services rendered
- ☐ Follow Recommended Best Practices for Service Verification [[Purchasing Snow & Ice Management Guide - Appendix 3](#)]

SAFETY & RISK MANAGEMENT:

- ☐ Have proper insurance coverage, including snow-specific requirements such as snow riders (i.e., CG 2292), umbrella policies, etc.
- ☐ Use a documented site engineering plan to verify where to properly locate snow to prevent thaw and refreeze hazards and line-of-sight issues
- ☐ Documented safety program and policies, including incident reporting process, ongoing education, training and implementation (e.g., tailgate talks, perimeter inspections, safety equipment and PPE)
- ☐ Parking lots and sidewalk clearing methods and policies adhere to ADA compliance guidelines, including [ADA Title III - 28 CFR Part 36.304](#) (Priorities for Accessibility) and [28 CFR 35.133 & 28 CFR 36.211](#) (Maintenance of Accessible Features)
- ☐ Contractual agreements align with Best Practices for Snow Industry Risk Management and Shared Accountability [[Purchasing Snow & Ice Management Guide - Appendix 4](#)]



SNOW & ICE MANAGEMENT ASSOCIATION

10140 N Port Washington Road
Milwaukee, WI 53092

414-375-1940

Info@sima.org

www.sima.org



www.sima.org/hireapro

The Best Practices Checklist and related presentation are offered to SIMA members for informational purposes only and are not a substitute for using sound professional judgment during snow and ice management activities. Best practice always depends on the circumstances of each snow and ice management project. SIMA, its officers, employees, authors and agents assume no responsibility for consequences arising from the use of, or failure to use, these recommended best practices.

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Designation: F2966 – 13

Standard Guide for Snow and Ice Control for Walkway Surfaces¹

This standard is issued under the fixed designation F2966; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide covers snow and ice control procedures. It is intended to recommend known methods to bring about reasonably safe walkways where snow and ice may impact the safety of pedestrians.

1.2 Conformance with this guide will not alleviate all snow and ice hazards; however, conformance represents a reasonable effort to reduce pedestrian risks associated with snow and ice.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

F1637 Practice for Safe Walking Surfaces

F1646 Terminology Relating to Safety and Traction for Footwear

3. Terminology

3.1 See Terminology F1646 for the following terms: fall, friction, pedestrian, ramp, sidewalk, slip, slip resistant, and walkway.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *anti-icing materials, n*—dry or liquid snow and ice control materials applied before a snow and ice event intended to prevent precipitation from bonding (that is, freezing) with the pavement, or weaken bonds formed for easier removal.³

3.2.2 *de-icing materials, n*—snow and ice melting products applied on top of a layer of snow or ice, or both, that is bonded to the pavement.

3.2.2.1 *Discussion*—Can also be applied proactively, during, or after plowing or snow and ice removal.³

4. Significance and Use

4.1 This guide outlines key elements of snow and ice control on walkway surfaces.

5. Snow/Ice Control

5.1 General:

5.1.1 Control techniques for exterior walkway surfaces include anti-icing, plowing, snow blowing, shoveling, de-icing, and/or applying sand or other abrasives.

5.1.2 Reasonable effort should be made to ensure exterior walkway surface safety for pedestrian traffic.

5.1.3 A combination of preparatory and ongoing snow and ice control methods should be employed, as applicable.

5.1.4 Snow and ice control procedures should be prioritized based on pedestrian usage. Where feasible, parking lots should be barricaded, plowed, and treated with de-icing materials before permitting use.

5.1.5 Snow and ice storage accumulations should be located to avoid obstructing drains, downspouts, or walkway drainage features.

5.1.6 Stair systems, ramps, handrails and side rails should be cleared of snow and ice before permitting their use.

5.1.7 Walkway surfaces should be monitored and treated for refreezing.

5.1.8 Removed snow and ice should be placed/stored in a manner that does not create a slip hazard upon melting or refreezing. For example, plowing snow accumulations to lower elevations of the property or onto grassy areas may prevent potentially hazardous refreezing of melt water.

5.1.9 Removed snow and ice should not be stored in a manner that creates a safety hazard for pedestrians, such as placement that blocks a path of egress. Fire hydrants and similar fixtures that could be covered by snow and ice should be marked with reflective posts, stakes, or other distinctive markings.

5.1.10 Special attention should be given to snow and ice clearance and control during reasonably foreseeable peak pedestrian traffic periods, including but not limited to early

¹ This guide is under the jurisdiction of ASTM Committee F13 on Pedestrian/Walkway Safety and Footwear and is the direct responsibility of Subcommittee F13.50 on Walkway Surfaces.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ *National Cooperative Highway Research Program (NCHRP) Report 577: Guidelines for the Selection of Snow and Ice Control Materials to Mitigate Environmental Impacts*, Transportation Research Board of the National Academies, 2007.



morning hours, shift change, or prior to employee, vendor, visitor, and customer arrivals, including commercial dock or receiving area driveways, steps and ramps.

5.1.11 To scrape and wipe de-icing and anti-icing materials, slush, water and other debris from pedestrian footwear at entrances, suitable walk off mats, recessed grille mats, permanent carpet tiles and similar equipment should be used. (See Practice F1637, subsection 5.4, for additional information.)

5.2 Planning:

5.2.1 Plans for snow and ice control should be in writing. Procedures should be prioritized based on volume and type of pedestrian traffic.

5.2.2 When utilized, snow and ice control service agreements with contractors should include means, materials, and methods for snow and ice control, as well as diagrams of areas to be serviced. Diagrams may also include locations of where snow storage accumulations should be placed to minimize slip and fall exposures.

5.2.3 Parking lots, sidewalks, exterior steps, ramps and other walkway surfaces exposed to snow and ice should be repaired and free of trip hazards, prior to winter. Where feasible, low areas or other interruptions in drainage flow in walkway surfaces should be corrected in a manner that preserves the slip resistant properties of the walkway surface.

5.2.4 Painted walkway surfaces should include the proper application of abrasives as recommended by the paint manufacturer.

5.2.5 Roof downspouts should direct drainage flow away from walkways or into underground or covered trough drains, drainage systems or landscaped retention areas rather than onto walkway surfaces that could freeze.

5.2.6 Vendor guidance regarding anti-icing and de-icing product effectiveness, temperature use, advantages,

disadvantages, environmental impact, and cost per unit should be considered.³ Pre-storm application of anti-icing or de-icing materials accelerates the melting process by creating liquid brine between the walkway surface and the snow and ice accumulation. Wetting of de-icing materials in solid form may cause the chemicals to begin melting more quickly and could reduce waste or scattering of materials.³

5.3 Equipment and Materials:

5.3.1 Motorized equipment such as plows, snow blowers, etc., should be utilized where manual methods cannot control snow and ice quickly enough or it would be impractical to use manual methods.

5.3.2 Manual snow removal equipment, such as shovels, scrapers, brooms, and similar equipment should be utilized for detailed removal of snow and ice.

5.3.3 Anti-icing or de-icing equipment should be in good condition and free of leaks.

5.3.4 Workers using anti-icing and de-icing solutions should be trained on application requirements and techniques, preferably by the vendor, if proprietary products are used. Special training may be needed, including the amount to apply and the effect of warming temperatures and increased humidity.

5.3.5 When snow removal or the use of de-icing materials are not possible, sand and other abrasives can be used to create traction.

6. Snow and Ice Control—High-Traffic Parking Areas

6.1 Snow and ice accumulations between parked vehicles should be removed, where practical, to reduce patches of ice and the potential for refreezing.

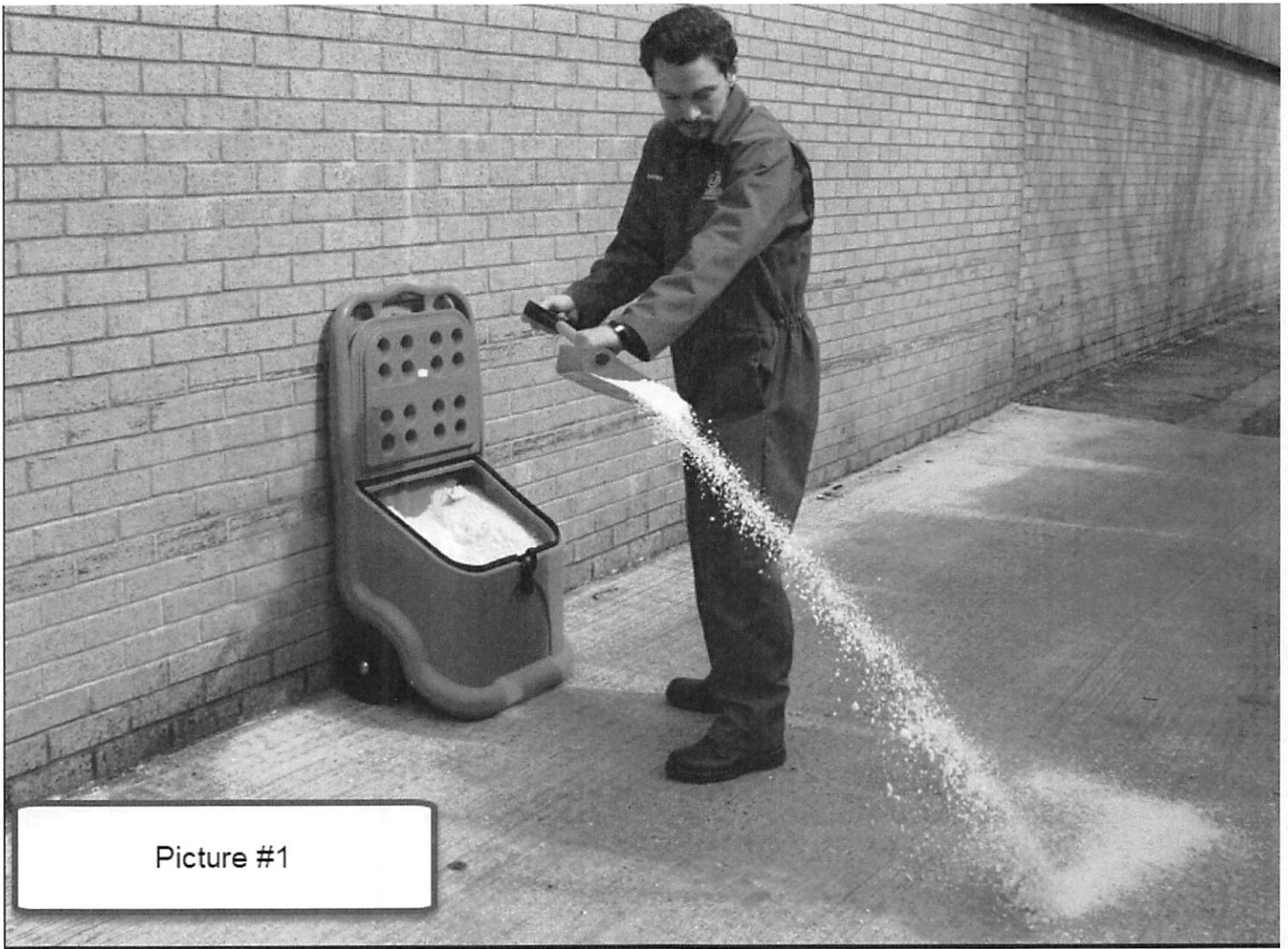
7. Keywords

7.1 anti-icing; control; de-icing; ice; refreezing; snow

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Picture #1

Jeremy Swenson Expert Witness – Deposition/Trial Testimony List

- Anita Martinec vs Delaware North Companies Parks & Resorts; Wuksachi Lodge; and Does 1-25 inclusive; Superior Court of California, County of Tulare; Case No: 257683; on behalf of Delaware North Companies Parks & Resorts; 2015.
- Robin Limberg vs Somerset Square Homeowners Association, Inc.; Circuit Court of Jackson County, MO at Independence; Case No: 1416-CV29931 Division 12; on behalf of Robin Limberg; 2015.
- Linda D. Cloud vs White River Health System, Inc; White River Health System; Clinically Integrated Network, LLC; Circuit Court of Sharp County, Arkansas Civil Division; Case No: CV 2014-54; on behalf of Linda D. Cloud; 2015.
- James Ostrich vs DNC Parks & Resorts at Sequoia, a California Corporation; Delaware North Companies Parks and Resorts, Inc., a Delaware Corporation; Delaware North Companies, Inc., a Delaware Corporation and Does 1 through 20; Superior Court of California County of Tulare, Unlimited Civil Division; Case No: 256663; on behalf of DNC Parks & Resorts at Sequoia; 2016.
- Janice Addison, Paul Klub vs Buck's Corp. Inc. d/b/a Bucky's Express; Iowa District Court for Pottawattamie County; Case No: LACV114151; on behalf of Janice Addison; 2016.
- Christopher Bridges and Rebecca Bridges vs. United States Of America; United States District Court Eastern District of Arkansas Western Division; Case No: 4:16-CV-347; on behalf of Christopher Bridges and Rebecca Bridges; 2016.
- Tonya Bryan vs. Family Health & Rehabilitation; Eighteenth Judicial District District Court, Sedgwick County, Kansas Civil Department; Case No: 14 CV 3480; on behalf of Tonya Bryan; 2017.
- Steven Swank v. Martin's Super Markets Inc. doing business as Martin's Super Market, Robert Cira, Mary Ann Cira, and Lake Effect Excavating, Inc.; State of Indiana, County of St. Joseph, Cause No. 71D07 1406 CT 000207; on behalf of Martin's Super Markets; 2017.
- Arnold Dallas Francis v. Highlands Hospital Corporation; State of Kentucky, Floyd Circuit Court Division I, Case No. LACV0f26110; on behalf of Highlands Hospital Corporation; 2017.
- Steven Snider v. Chrysler Group, LLC, Mark Warren Snow Systems Incorporated; In the Circuit Court of the Seventeenth Judicial Circuit, Winnebago County, Illinois, Case No. 14-L-199; on behalf of Chrysler Group, LLC; 2017.
- Brent A. Johnson; Teri L. Johnson vs. Big Ten Residential, LLC; In the Iowa District Court in and for Winneshiek County, Civil Action No. 15-CI-543; on behalf of Brent A. Johnson; 2017.
- Robin Kreisel and Tammy Kreisel v. City of Cedar Falls Iowa and Cedar Falls Utilities; In the Iowa District Court for Black Hawk county, Law No. LACV128932; on behalf of Robin Kreisel and Tammy Kreisel; 2018.

Jeremy E. Swenson, CSP
Snow Removal Expert Witness

Professional Consultation Fee Structure Summary
Jeremy E. Swenson

Non-Refundable retainer for review of documents and case review:	\$2,500.00
Fees billed against retainer, review & consultation of documents provided:	\$195.00 hr.
Deposition, Report Writing & Trial hourly rate: (4 hour minimum)	\$295.00 hr.

Expenses for travel or site visits will be at cost, receipts submitted with invoice. Travel time will be billed at \$100.00 per hour.

Client may initiate initial phone call up to 15 minutes at no charge to familiarize attorney with Jeremy Swenson regarding potential case and possible engagement of services. Agreement to engage services with Jeremy Swenson will include signing and returning Engagement Letter to Jeremy Swenson and no case review or billing will take place until Engagement Letter is returned and on file.

Make Checks Payable to: Swenson Consulting

Please mail to: Swenson Consulting
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MasterCard, Visa, American Express and Discover are accepted. (4% transaction fee will be applied to credit card transactions).